

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the present application.

**Listing of Claims:**

**Claim 1 (canceled)**

**Claim 2 (currently amended):** The surface-coated machining tool set forth in claim 4, wherein said predetermined thickness of said compound thin film is 0.05  $\mu\text{m}$  or more and less than 2  $\mu\text{m}$  ~~3  $\mu\text{m}$  or less~~.

**Claim 3 (canceled)**

**Claim 4 (currently amended):** A surface-coated machining tool, comprising:  
a cemented-carbide base material containing tungsten carbide and cobalt, with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less;  
and

coated to a given thickness in at least a single layer over said cemented-carbide base material, a compound thin film made up of a combination of, in given elemental proportions, one or more elements selected from the group titanium, chromium, vanadium, silicon and aluminum, and one or more elements selected from carbon and nitrogen;

wherein said compound thin film is vapor-deposited onto said base material under reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions that, together with said given thickness and said given elemental proportions, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less to said compound thin film; and

wherein said compound thin film has an as-deposited ~~[[is]]~~ surface roughness ~~adjusted to be of~~ 0.01  $\mu\text{m}$  or more and less than 0.3  $\mu\text{m}$  ~~and 0.5  $\mu\text{m}$  or less~~ by indication Ra.

**Claim 5 (previously presented):** A surface-coated machining tool, comprising:

a cemented-carbide base material containing tungsten carbide and cobalt, with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less; and

a hard carbon thin film made up essentially of carbon atoms only, coated to a given thickness over said cemented-carbide base material in at least a single layer, by a physical vapor deposition method in which graphite is made a raw material, and under reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions that, together with said given thickness, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less to said compound thin film.

**Claim 6 (original):** The surface-coated machining tool set forth in claim 5, wherein said hard carbon thin film is 0.05  $\mu\text{m}$  or more, and 3  $\mu\text{m}$  or less in thickness.

**Claim 7 (canceled)**

**Claim 8 (previously presented):** The surface-coated machining tool set forth in claim 5, wherein said hard carbon thin film is in surface roughness adjusted to be 0.01  $\mu\text{m}$  or more and 0.5  $\mu\text{m}$  or less by indication Ra.

**Claim 9 (canceled)**

**Claim 10 (original):** The surface-coated machining tool set forth in claim 2, wherein the tungsten carbide in said cemented-carbide base material is 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size.

**Claim 11 (canceled)**

**Claim 12 (original):** The surface-coated machining tool set forth in claim 4, wherein the tungsten carbide in said cemented-carbide base material is 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size.

**Claim 13 (original):** The surface-coated machining tool set forth in claim 5, wherein the tungsten carbide in said cemented-carbide base material is 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size.

**Claim 14 (original):** The surface-coated machining tool set forth in claim 6, wherein the tungsten carbide in said cemented-carbide base material is 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size.

**Claim 15 (canceled)**

**Claim 16 (original):** The surface-coated machining tool set forth in claim 8, wherein the tungsten carbide in said cemented-carbide base material is 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size.

**Claim 17 (currently amended):** A surface-coated machining tool, comprising:  
a cemented-carbide base material containing tungsten carbide and cobalt,  
with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less;  
and

coated to a given thickness in at least a single layer over said cemented-carbide base material, by a cathodic-arc deposition method, a compound thin film made up of a combination of, in given elemental proportions, one or more elements selected from the group titanium, chromium, vanadium, silicon and aluminum, and one or more elements selected from carbon and nitrogen;

wherein reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions in said cathodic-arc deposition method, together with said given thickness and said given elemental proportions, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less to said compound thin film; and

wherein said compound thin film has an as-deposited ~~[[is]]~~ surface roughness ~~adjusted to be of~~ 0.01  $\mu\text{m}$  or more and less than 0.3  $\mu\text{m}$  ~~and 0.5  $\mu\text{m}$  or less~~ by indication Ra.

**Claim 18 (currently amended):** A surface-coated machining tool, comprising:  
a cemented-carbide base material containing tungsten carbide and cobalt,  
with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less;  
and

coated in at least a single layer over said cemented-carbide base material, by a cathodic-arc deposition method, a compound thin film 0.05  $\mu\text{m}$  or more and 3  $\mu\text{m}$  or less in thickness, made up of a combination of, in given elemental proportions, one or more elements selected from the group titanium, chromium, vanadium, silicon and aluminum, and one or more elements selected from carbon and nitrogen;

wherein reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions in said cathodic-arc deposition method, together with said thickness and said given elemental proportions, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less to said compound thin film; and

wherein said compound thin film has an as-deposited ~~[[is]]~~ surface roughness ~~adjusted to be of~~ 0.01  $\mu\text{m}$  or more and less than 0.3  $\mu\text{m}$  ~~and 0.5  $\mu\text{m}$  or less~~ by indication Ra.

**Claim 19 (previously presented):** A surface-coated machining tool, comprising:

a cemented-carbide base material containing tungsten carbide 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size, and cobalt, with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less; and

a hard carbon thin film made up essentially of carbon atoms only, coated to 0.05  $\mu\text{m}$  or more, and 3  $\mu\text{m}$  or less in thickness over said cemented-carbide base material in at least a single layer, by a physical vapor deposition method in which graphite is made a raw material, and under reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions that, together with said thickness, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less to said compound thin film.

**Claim 20 (previously presented):** A surface-coated machining tool, comprising:

a cemented-carbide base material containing tungsten carbide 0.1  $\mu\text{m}$  or more and 1.5  $\mu\text{m}$  or less in pre-sintering crystal-grain size, and cobalt, with the cobalt inclusion amount being 4 weight % or more and 12 weight % or less; and

a hard carbon thin film made up essentially of carbon atoms only, coated to a given thickness over said cemented-carbide base material in at least a single layer, by a cathodic-arc deposition method in which graphite is made a raw material, and under reaction-gas pressure, base-material bias voltage, and deposition-temperature conditions that, together with said given thickness, are predetermined so as to impart a compressive residual stress of 0.1 GPa or more and 8 GPa or less is imparted to said hard carbon thin film.

**Claim 21 (new):** The surface coated machining tool set forth in claim 4, wherein the compound thin film consists of only a single layer.

**Claim 22 (new):** The surface coated machining tool set forth in claim 5, wherein the cemented-carbide base material has a substantially uniform distribution of tungsten carbide and cobalt.

**Claim 23 (new):** The surface coated machining tool set forth in claim 5, wherein the hard carbon film has a thickness of less than 1  $\mu\text{m}$ .